

Appln. No.: 10/780,947
Amendment Dated August 3, 2005
Reply to Office Action of May 3, 2005

GRY-120US

Remarks/Arguments:

In the application, claims 1-11 are presently pending. Claim 1 has been amended. New claims 10 and 11 have been added.

35 U.S.C. §112 Rejection

In the Office Action, claim 1 was rejected under 35 U.S.C. §112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. More specifically, the Examiner stated that "said stop" in claim 1 lacks antecedent basis, rendering the claim indefinite. Applicants respectfully traverse this rejection as it applies to amended claim 1. Applicants have deleted the word "said" from the claim and believes that such deletion now makes the claim definite. Claims 2-9 all depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 2-9 are now definite for the same reasons as set forth above with respect to claim 1. Applicants respectfully request reconsideration and allowance of claims 1-9.

35 U.S.C. §102 Rejections**Patel reference**

In the Office Action, the Examiner rejected claims 1-3 and 5-6 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,533,890 to Patel ("Patel"). Applicants respectfully traverse this rejection and amend the claims herein to overcome the rejection.

Patel discloses an electromechanical valve actuator (10) for internal combustion engines, comprising two electromagnets (12, 68; 14, 70) with a magnetic armature 28 mounted on a shaft 18 for axial movement between the electromagnets (12, 68; 14, 70). The shaft 18 is mounted on bushings 20, 22 that act as stops to stop the movement of the armature 28 and also prevent contact between the armature 28 and the electromagnets (12, 68; 14, 70). The bushings 20, 22 are recessed within the respective electromagnets (12, 68; 14, 70) and are disposed distally from the surfaces of the electromagnets (12, 68; 14, 70) that are closest to the armature 28.

Claim 1, as amended, recites, *inter alia*, an electromechanical valve actuator for internal combustion engines, comprising an electromagnet and a mobile magnetic plate intended to

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come into contact with a part of the electromagnet. At least one stop is located on a surface of the electromagnet which is closest to the plate or on the plate to limit a contact surface between the plate and the electromagnet. The electromagnet comprises a magnet in a magnetic circuit. Emphasis added.

In order to anticipate a claim under 35 U.S.C. §102, the reference must teach every element of the claim. M.P.E.P. §2131. Furthermore, "the identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989) and M.P.E.P. §2131.

Applicants respectfully submit that Patel fails to disclose or suggest the electromagnet including a stop being located on the surface of the electromagnet which is closest to the plate, as is claimed in amended claim 1. On the contrary, each stop in Patel is recessed away from the surface of the electromagnet closest to the plate. Further, Patel fails to disclose or suggest any stops whatsoever on the plate. Since Patel fails to disclose or suggest the claimed limitation of the at least one stop being located on a surface of the electromagnet that is closest to the plate, or on the plate itself, Applicants respectfully submit that Patel fails to anticipate claim 1, as amended. Applicants therefore respectfully request reconsideration and allowance of claim 1.

Claims 2, 3, 5, and 6 all depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 2, 3, 5, and 6 are patentable over Patel for the same reasons as set forth above with respect to claim 1. Reconsideration and allowance of claims 2, 3, 5, and 6 is therefore respectfully requested.

Baier reference

In the Office Action, the Examiner rejected claims 1-9 under 35 U.S.C. §102(b) as being anticipated by German Patent Application Publication No. DE 100 03 928 A1 to Baier ("Baier"). Applicants respectfully traverse this rejection and amend the claims herein to overcome the rejection.

Baier discloses an actuator having a pair of electromagnets 6, 7 with a magnetic plate 8 that is mounted on a shaft 20 for axial movement between the electromagnets 6, 7. Fig. 3 of Baier shows a direct contact of the plate 8 with the electromagnet 7. Contrary to the Examiner's assertion in the Office Action, that the at least one stop is part of 6 and 7 and part

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of 8, Baier fails to disclose or suggest any type of stop that is located either on the surface of the electromagnet closest to the plate, or on the plate itself. As shown in Fig. 3, Baier discloses direct contact between the electromagnet 7 and the plate 8, without any type of stop *per se*.

Claim 1 is discussed above. Since Baier fails to disclose or suggest the limitation of a stop on a surface of the electromagnet which is closest to the plate or on the plate, Applicants respectfully submit that Baier fails to anticipate claim 1. Applicants therefore respectfully request reconsideration and allowance of claim 1.

Claims 2-9 all depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 2-9 are patentable over Baier for the same reasons as set forth above with respect to claim 1. Reconsideration and allowance of claims 2-9 is therefore respectfully requested.

Piaccabrino reference

In the Office Action, the Examiner rejected claims 1-4 and 9 under 35 U.S.C. §102(b) as being anticipated by French Patent Application Publication No. FR 2784497 A1 to Piaccabrino ("Piaccabrino"). Applicants respectfully traverse this rejection and amend the claims herein to overcome the rejection.

Piaccabrino discloses a valve actuator having electromagnets 36, 38; 42, 44 and a movable magnetic plate 22 disposed for movement between the electromagnets 36, 38; 42, 44. Contrary to the Examiner's assertion in the Office Action, that the at least one stop is part of 36 and 42 and part of 22, Piaccabrino fails to disclose or suggest any type of stop that is located either on the surface of the electromagnet closest to the plate, or on the plate itself. While the plate 22 may arguably cease to move upon engagement with either electromagnet 36, 38 or 42, 44, Piaccabrino fails to disclose any structure of a stop mounted on a surface of the electromagnet which is closest to the plate or on the plate.

Claim 1 is discussed above. Since Piaccabrino fails to disclose or suggest the limitation of a stop on a surface of the electromagnet which is closest to the plate or on the plate, Applicants respectfully submit that Piaccabrino fails to anticipate claim 1. Applicants therefore respectfully request reconsideration and allowance of claim 1.

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Claims 2-4 and 9 all depend, either directly or indirectly, from claim 1, and Applicants respectfully submit that claims 2-4 and 9 are patentable over Piaccabrino for the same reasons as set forth above with respect to claim 1. Reconsideration and allowance of claims 2-4 and 9 is therefore respectfully requested.

New claims 10 and 11

New claim 11 recites that the stop is constructed from a material adapted to absorb energy. Support for this claim may be found in the Specification, paragraph [0038]. Applicants respectfully submit that no new matter has been added. Since claim 10 depends from claim 1, Applicants respectfully submit that claim 10 is patentable for the same reasons as set forth above with respect to claim 1.

New claim 11 recites, inter alia, an electromechanical valve actuator for internal combustion engines, comprising an electromagnet and a mobile magnetic plate intended to come into contact with a part of the electromagnet. At least one stop is located on a surface of the electromagnet which is closest to the plate or on the plate. A contact surface area of the plate is smaller than a total surface area of the plate to limit a contact surface between the plate and the electromagnet. The electromagnet comprises a magnet in a magnetic circuit. Emphasis added.

Support for this claim can be found in the Specification, paragraphs [0032]-[0035], [0039]-[0042], as well as Figs. 3a, 3b, 4a, 4b, 5a, and 5b. Applicants respectfully submit that no new matter has been added.

As can be seen in the three embodiments shown in Figs. 3a and 3b; 4a and 4b; and 5a and 5b, B₃₀₀, B₄₀₀, and B₅₀₀, respectfully, are mounted on each magnetic actuator 300, 400, 500, respectfully, to stop the movement of the plate 306, 406, 506 with respect to the actuator 300, 400, 500. Further, as can be seen in Fig. 3b, when the plate 306 is in contact with the actuator 300, a gap "e" is formed, indicating that the contact area of the plate with the actuator is less than the total surface area of the plate itself. Referring to Fig. 4a, the stops B₄₀₀ on each of the left and right sides of the actuator 400 include a gap between the upper stop B₄₀₀ and the lower stop B₄₀₀, indicating that less than the total surface area of the plate 406 engages the actuator 400 when the plate 406 contacts the actuator 400. Similarly, with regard to Fig. 5a, the stops B₅₀₀ on each of the left and right sides of the actuator 500 include a gap between the

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upper stop B₅₀₀ and the lower stop B₅₀₀, indicating that less than the total surface area of the plate 506 engages the actuator 500 when the plate 506 contacts the actuator 500.

Applicants respectfully submit that none of the cited prior art discloses or suggests the requirements of at least one stop being located on a surface of the electromagnet which is closest to the plate or on the plate and a contact surface area of the plate being smaller than a total surface area of the plate to limit a contact surface between the plate and the electromagnet. Applicants therefore respectfully submit that claim 10 is patentable over the cited prior art, and respectfully request consideration and allowance of claim 10.

Conclusion

With the foregoing amendment, Applicants respectfully submit that claims 1-11 are all in condition for allowance. Prompt reconsideration and allowance of claims 1-11 are respectfully requested.

Respectfully submitted,



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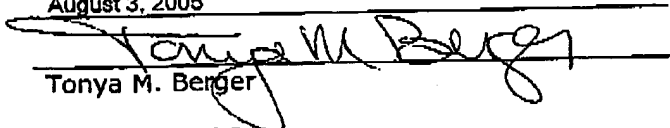
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